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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/581,766	06/06/2006	Yong Hwan Kim	930086-2028	8494

7590 05/12/2008

Ronald R. Santucci
c/o Frommer Lawrence & Haug
745 Fifth Avenue
New York, NY 10151

EXAMINER	
HEINCER, LIAM J	

ART UNIT	PAPER NUMBER
1796	

MAIL DATE	DELIVERY MODE
05/12/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/581,766	KIM ET AL.	
	Examiner	Art Unit	
	Liam J. Heincer	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 March 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gijutsu et al. (JP 11-323258) in view of Sjøholm et al. (US Pat. 5,948,661). Note: A machine translation is being used for JP 11-323258.

Considering Claims 1, 3, and 15: Gijutsu et al. teaches a process for preparing a phenolic polymer (¶0006) via polymerization of phenolic monomers (¶0005) having unsaturated aliphatic chains (¶0005) in the presence of peroxidase biocatalyst (¶0006) and an oxidant (¶0009).

Gijutsu et al. does not teach the polymerization as using a phenothiazine derivative. However, Sjøholm et al. teaches using phenothiazine-10-propionic acid in a peroxidase enzyme system (4:6-13). Gijutsu et al. and Sjøholm et al. are combinable as they are concerned with the same technical difficulty, namely increasing the oxidative properties of a peroxide through the use of peroxidase enzyme catalysts. It would have

been obvious to a person having ordinary skill in the art at the time of the invention to have used the phenothiazine of Sjøholm et al. in the method of Gijutsu et al., and the motivation to do so would have been, as Sjøholm et al. suggests, to increase the oxidative properties of the peroxide, thereby increasing the effectiveness of the catalyst (4:1-15).

Considering Claim 2: Gijutsu et al. does not teach the phenothiazine derivative as being present in a concentration of 20-100 μM. However, Sjøholm et al. teaches the phenothiazine as being present in a concentration of 20-100 μM (4:13-15). It would have been obvious to have used the phenothiazine derivative in the amount prescribed in Sjøholm et al. in the method Gijutsu et al., and the motivation to do so would have been, as Sjøholm et al. suggests, this amount will enhance the effects of the peroxidase (4:1-5).

Considering Claims 4 and 16: Gijutsu et al. teaches the phenolic monomer as being a plant phenolic oil (¶0005).

Considering Claim 5: Gijutsu et al. teaches the peroxidase as being of plant or fungus orgin (¶0007).

Considering Claim 6: Gijutsu et al. teaches the oxidant as being hydrogen peroxide or hydroalkyl peroxide (¶0009).

Considering Claims 7 and 9-13: Gijutsu et al. teaches a hardened/cured phenolic resin (¶0016).

Considering Claim 8: Gijutsu et al. teaches a coating material comprising the resin (¶0001).

Considering claims 14 and 17: Gijutsu et al. teaches the peroxidase as being horseradish or soybean peroxidase (¶0007).

Response to Arguments

Applicant's arguments filed March 6, 2008 have been fully considered but they are not persuasive, because:

A) In response to applicant's argument that Gijutsu et al. and Sjøholm et al. are nonanalogous art, it has been held that a prior art reference must either be in the field of

applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Gijutsu et al. and Sjøholm et al. are combinable as they are concerned with a similar technical difficulty, namely increasing the oxidative properties of a peroxide through the use of peroxidase enzyme catalysts.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to combine the references, as Sjøholm et al. suggests, is to increase the oxidative properties of the peroxide, thereby increasing the effectiveness of the catalyst (4:1-15).

B) Applicant's argument of unexpected results in not persuasive. In order to show unexpected results, applicant must provide a showing the result is unexpected, not merely superior. There is nothing of record to show the unexpected nature of the result.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Liam J. Heincer whose telephone number is 571-270-3297. The examiner can normally be reached on Monday thru Friday 7:30 to 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on 571-272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MARK EASHOO/
Supervisory Patent Examiner, Art Unit 1796
10-May-08

LJH
April 25, 2008